

Docket No. F-8223

Ser. No. 10/823,863

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CENTRAL FAX CENTER****DEC 26 2007****AMENDMENTS TO THE CLAIMS:**

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1-11. (Canceled)

12. (Currently Amended) A cylindrical battery comprising:

an electrode group formed from battery electrode plates of a positive electrode and a negative electrode spirally wound with a separator interposed therebetween;

a cylindrical battery case for housing said electrode group; and

at least one of the battery electrode plates being manufactured by a method comprising:

impregnating an entire porous core substrate, which forms the at least one battery electrode plate and is shaped like a thin plate, with an active material;

press working a first surface of said active material impregnated core substrate to form a rail shaped protrusion protruding above pressed portions and defining boundaries with said pressed portions;

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removing the active material from a volume of said active material impregnated core substrate defined by said rail shaped protrusion and extending from said first surface at said rail shaped protrusion to an opposing second surface of said active material impregnated core substrate to form said rail shaped protrusion into a core substrate exposed section by applying ultrasonic vibrations to said rail shaped protrusion so as to result in 4% or less residual active material by weight in said volume of said core substrate exposed section;

compressing said core substrate exposed section down to an identical level with said pressed portions to result in a strength of said core substrate exposed section, after said removing of said active material and said compressing, being substantially equal to a strength of said pressed portions, and substantially true straight boundaries being formed between said pressed portions and said core substrate exposed section after said compressing ~~exhibit~~ exhibiting a deviation from straight of no more than 0.2 mm; and ~~cutting said core substrate exposed section after said~~ ~~compressing to form said battery electrode plate with a current~~

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~~collector having an edge formed by the cutting of said core
substrate exposed section~~

cutting said core substrate exposed section along a straight
line displaced from said substantially true straight boundaries by a
predetermined width after said compressing to form said battery
electrode plate with a current collector having a straight edge
formed by the cutting of said core substrate exposed section and
said predetermined width defined by said straight edge and an
opposing one of said substantially true straight boundaries.

13. (Previously Presented) The cylindrical battery according to claim 12, wherein said ultrasonic vibrations are applied to said rail shaped protrusion with an ultrasonic device producing an ultrasonic amplitude in a range of 25 to 50 microns.

14. (Previously Presented) The cylindrical battery according to claim 13, wherein said core substrate has a lower surface opposite an upper surface in which said rail shaped protrusion is formed, the rail shaped protrusion has a thickness B which is approximately 1.1 mm extending from said lower surface to a top surface of said rail shaped protrusion, said pressed portions have a thickness D which is

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approximately 0.6 mm, and said ultrasonic device applies said ultrasonic vibrations using a horn having a surface positioned a distance C above said lower surface which is approximately .7 to 0.8 mm.

15. (Previously Presented) The cylindrical battery according to claim 14, further comprising applying vacuum suction devices to said lower surface of said core substrate opposing said ultrasonic device to capture active material dislodged by said ultrasonic vibrations.

16. (Previously Presented) The cylindrical battery according to claim 15, wherein said impregnating the entire porous core substrate before said work pressing forming said pressed portion is effected so as to produce an impregnation density variation of no more than 1.5% in said pressed portion after forming said battery electrode.

17. (Previously Presented) The cylindrical battery according to claim 12, wherein said impregnating the entire porous core substrate before said work pressing forming said pressed portion is effected so as to produce an impregnation density variation of no more than 1.5% in said pressed portion after forming said battery electrode.

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18. (Previously Presented) The cylindrical battery according to claim 12, wherein said pressed portions are pressed to approximately half a thickness by applying 10 ton/cm using a roller advanced at approximate 450 mm/sec.

19. (Canceled)

20. (Canceled)